Developing a web application to improve communication at a software company.

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Research methodology for the Dissertation submitted in partial fulfillment of the requirements for the degree *Bsc in Information Technology Hons* at the Vaal Campus of the North-West University

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Date of submission: 2021/05/12

Version: 1.0

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EU	European Union (Abbreviation)

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Chapter 4: Data Analysis

1. Introduction

The goal of this study is to develop a web application that can be used to enhance communication between developers and management at a South African software development company. As discussed in Chapter 2, this study follows the Vijay Vaishnavi (2004) process model, this chapter will focus on the "Suggestion" phase.

According to Valenzuela and Shrivastava (2002) the reason behind conducting an interview is to get a better understanding and insight on how to design the artifact. An interview was done with an experienced project manager from the industry, as part of the analysis that is required to design the artifact.

This chapter will firstly give background of the participant, followed by the interview questions. The section that follows will provide the feedback from the interview. An analysis of the feedback obtained is discussed in the section that follows. The chapter will end with a conclusion.

2. Problem description and background

In the corporate world, businesses rely on effective communication to succeed. Developers lack the number of screens that they need to keep all their important tabs open. This makes it harder for important messages to reach developers and influences productivity and creativity (Schrader, 2018).

As a solution, an artifact has to be developed to assist with the effectiveness of communication in the industry.

3. Aims and objectives of project

This study proposes the development of a communication web application that can easily be viewed in an office by all employees to allow easy access to important communication regarding specific software development projects. Where the primary objective is to develop a web application for a South African software development

company that allows for easy access to important communication relating to specific project.

4. Data Analysis

4.1. Introduction

According to Seers (2012) qualitative research uses a rigorous and systematic approach to answer questions on what people feel or think about something. This can address why something is what it is, or why something happened. Qualitative data takes the form of text or words, for example an interview.

Qualitative data analysis is then making sense of the data gathered from the interview that was conducted (Caudle, 2004). The Analysis makes what would have been important to the study clearer.

4.2. Participant

The participant that is applicable to this study is a specialist in project management and has experience in working in the industry. The feedback that is going to be obtained will benefit towards the design and layout of the artefact, as the participant has developed, designed, and managed various artefacts that are similar in the ways of client's expectations and needs.

This participant is perfect in two ways, their daily tasks include streamlining communication across their team, this kind of feedback will contribute towards achieving the goal of this study. As well as project managers are superior in understanding an artifact as a whole, focusing on quality, cost and schedule (DiStasi, 2020), this kind of feedback will contribute to the design and development of the artefact.

4.3. Interview Questions

Table 4.1 below contains interview questions that will be asked for gathering the necessary data needed for analysis. Different sources were used to set up the needed questions.

Number	Question
1.	What is the overall purpose of the artefact? (McNamara, 2019)
2.	What problem will be solved by the Software? (Tripathi, 2017)
3.	Are there other products or tools that we can, should, or need to integrate with? (Brockett, 2020)
4.	What features are most important to the target audience? (Tripathi, 2017)
5.	What value are we providing to users? (Brockett, 2020)
6.	What does success look like at each stage of the process? (Kumulos, 2015)
7.	What is the underlying assumptions? (Kumulos, 2015)

The questions in table 4.1 are the basic questions that are asked in such an interview, the last question is there to get information on what happens after the study. These questions need to be adapted to fulfil the purpose of the study and for the data analysis to be as accurate as possible. The questions that are adapted are shown in the table below.

Number	Question from source	Question adapted for the study
1.	What is the overall purpose of the artefact? (McNamara, 2019)	What should the web application regarding communication accomplish at a software company?
2.	What problem will be solved by the software? (Tripathi, 2017)	What problems will the web application solve at a software company?
3.	Are there other products or tools	What other products or tools can,

	that we can, should, or need to integrate with? (Brockett, 2020)	should, or need to integrate into the web application?
4.	What features are most important to the target audience? (Tripathi, 2017)	What features are the most important to add in the web application to improve communication?
5.	What value are we providing to users? (Brockett, 2020)	What value are we adding to the company?
6.	What does success look like at each stage of the process? (Kumulos, 2015)	At each stage of development, what do you see as success?
7.	What is the underlying assumptions? (Kumulos, 2015)	What are the underlying assumptions when developing the web application?

The feedback from the interview will be represented in the next section of the study.

4.4. Feedback from the interview

4.4.1. What should the web application regarding communication accomplish at a software company?

- The web application should enhance the communication between management and developers at the company, the web application should be able to assist in the effectiveness of communication.
- It should be easy enough to access important information regarding communication between employees.
- The web application has to let us know when the plans of the project has changed. The web application needs to keep up, and constantly be updated by the project manager of developer.

- The web application should send notifications to remind you of something important.
- In general, it should feel that you put less effort into communicating with your employees and put more effort into working on your project.

4.4.2. What problems will the web application solve at a software company?

- Make it easier for important messages to reach the team, including project manager and developers.
- Making developers more productive and creative as they do not have to look at their phones periodically.
- Project managers have more freedom and can handle more than one project with ease.
- Developers have less tabs open while they work, as only one is needed and they can switch between programs easier.

4.4.3. What other products or tools can, should, or need to integrate into the web application?

- As the company is already using Slack as their main communication application, it should be integrated into the web application in a way.
- WhatsApp is also an application that is generally used to communicate when employees are not at their computers, especially after hours.
- Discord is a good Voice over Internet Protocol and can be very useful when having quick meetings.
- Trello can be used to organize the companies sprints and communicate on how each project is doing.

4.4.4. What features are the most important to add in the web application to improve communication?

- Issue queues, to exchange information about development, to give feedback as a project manager and developer.
- Use existing or create a chat system, such as Slack, Discord or WhatsApp.
- There should also be a calendar, to make it easier to organize meetings between employees and have a general idea of what is going on in the company.
- There should be a way for everyone to see with what other employees are busy with, and if they are too busy to talk to.
- A dashboard to see only the most important information at first glance.

4.4.5. What value are we adding to the company?

- Not immediately interrupting an employee, but still notify that something important is waiting for their attention. This will create a more relaxed environment, while still maintaining order in the company.
- Easy access to the desired communication in the company and less miscommunication.
- More effective communication between employees, this leads to less time wasted, better quality of work and more money being made.

4.4.6. At each stage of development, what do you see as success?

- As a user, the end product is important. It should be bug free, easy to use and learn. It should also look formal.
- As a project manager, each sprint should be finished on time, bugs should be to a minimum. If this is not achieved, a different approach should be taken to improve on the quality of the project.

- Propper testing should be in place, this should include unit testing and user acceptance testing.
- At the end documentation should be in place for users.

4.4.2. What are the underlying assumptions when developing the web application?

- The users' role is always first, and the changes should be made to benefit them.
- There should always be a preview of the work that has been done, this will happen after each sprint.
- It is sometimes better to use an off the shelf product than to make your own, it is usually cheaper.

4.5. Analysing the data obtained from the interview

The data analysis technique that is going to be used in this study is open coding,

6. Summary

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